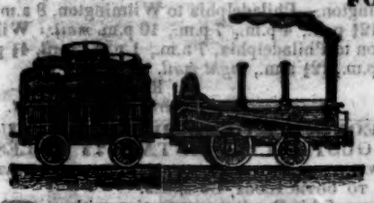
AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY AND MINES.



ESTABLISHED 1831.

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SECOND QUARTO SERIES, VOL. III., No. 21.] SATURDAY, MAY 22, 1847. [WHOLE No. 570, VOL. XX.

AMERICAN RAILROAD JOURNAL.
OFFICE AT THE FRANKLIN HOUSE,
105 Chestnut Street,
PHILADELPHIA, PA.

This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

TERMS.—Five Dollars a year, *in advance.*

RATES OF ADVERTISING.

One page per annum		$125 00
One column	"	50 00
One square	"	15 00
One page per month		20 00
One column	"	8 00
One square	"	2 50
One page, single insertion		8 00
One column	" "	3 00
One square	" "	1 00
Professional notices per annum		5 00

BOSTON AND PROVIDENCE RAILROAD. Passenger Notice. Summer Arrangement. On and after Monday, Sept. 28, 1846, the Passenger Trains will run as follows:

For New York—Night Line, via Stonington. Leaves Boston every day, but Sunday, at 5 p.m.

Accommodation Trains, leave Boston at 7½ a.m. and 3½ p.m., and Providence at 8 a.m. and 3½ p.m.

Dedham trains, leave Boston at 9 a.m.; 3 p.m., 5½ p.m., and 10½ p.m. Leave Dedham at 8 a.m. and 4½ and 9 p.m.

Stoughton trains, leave Boston at 11½ a.m. and 4·10 p.m. Leave Stoughton at 8 a.m. and 2½ p.m.

All baggage at the risk of the owners thereof.

31 1y W. RAYMOND LEE, *Sup't.*

BRANCH RAILROAD and STAGES connecting with the Boston and Providence Railroad.

Stages connect with the Accommodation trains at the Foxboro' Station, to and from Woonsocket. At the Seekonk Station, to and from Lonsdale, R. I. via Pawtucket. At the Sharon Station, to and fr m Walpole, Mass. And at Dedham Village Station, to and from Medford, via Medway, Mass. At Providence, to and from Bristol, via Warren, R. I.—Taunton, New Bedford and Fall River cars run in connection with the accommodation trains.

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for 1847.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25 and	1·90
" Pottsville "	34	1·40 and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

LEXINGTON AND OHIO RAILROAD. Trains leave Lexington for Frankfort daily, at 5 o'clock a.m., and 2 p.m.

Trains leave Frankfort for Lexington daily, at 8 o'clock a.m. and 2 p.m. Distance, 28 miles. Fare $1·25.

On Sunday but one train, 5 o'clock a.m. from Lexington, and 2 o'clock p.m. from Frankfort.

The winter arrangement (after 15th September to 15th March) is 6 o'clock a.m. from Lexington, and ma. 9. from Frankfort, other hours as above.

35 1y

BOSTON AND MAINE RAILROAD. Upper Route, to Portland and the East.

SUMMER ARRANGEMENT, April 1, 1847.

PORTLAND TRAINS.
Leave Boston at 7 A.M. and 2½ P.M.
Leave Portland at 7½ A.M. and 3 P.M.

GREAT FALLS TRAIN.
Leave Boston at 5 P.M.
Leave Great Falls at 6½ A.M.

HAVERHILL TRAINS.
Leave Boston at 11½ A.M. and 6·20 P.M.
Leave Haverhill at 6½ A.M. and 4½ P.M.

READING TRAINS.
Leave Boston at 8½ A.M. and 8½ P.M.
Leave Reading at 6 A.M. and 1½ P.M.

MEDFORD BRANCH TRAINS.
Leave Boston at 7½, 11½ A.M., 2½, 5½, 7 P.M.
Leave Medford at 6½, 8 A.M., 1½, 4½, 6 P.M.

The Depot in Boston is on Haymarket Square.

Passengers are not allowed to carry Baggage above $50 in value, and that *personal*, unless notice is given, and an extra amount paid, at the rate of the price of a Ticket for every $500 additional value.

1y31 CHAS. MINOT, *Sup't.*

SUMMER ARRANGEMENT.—NEW YORK AND ERIE RAILROAD LINE, from April 1st until further notice, will run daily (Sundays excepted) between the city of New York and Middletown, Goshen, and intermediate places, as follows:

FOR PASSENGERS—
Leave New York at 7 A. M. and 4 P. M.
" Middletown at 6½ A. M. and 5½ P. M.

FARE REDUCED to $1 25 to Middletown—way in proportion. Breakfast, supper and berths can be had on the steamboat.

FOR FREIGHT—
Leave New York at 3 P. M.
" Middletown at 12 M.

The names of the consignee and of the station where to be left, must be distinctly marked upon each article shipped. Freight not received after 5 P. M. in New York.

Apply to J. E. Clarkson, agent, at office corner of Duane and West sts. H. C. SEYMOUR, Sup't. March 25th, 1846.

Stages run daily from Middletown, on the arrival of the afternoon train, to Milford, Carbondale, Honesdale, Montrose, Towanda, Owego, and West; also to Monticello, Windsor, Binghamton, Ithaca, etc., etc. Agent on board. 13 tf

NORWICH AND WORCESTER RAILROAD. Summer Arrangement. Change of Hours. Commencing on Wednesday, April 21, 1847.

Accommodation Trains, daily, (except Sunday.) Leave Norwich, at 6 a. m., and 4½ p. m. Leave Worcester, at 8½ a. m., and 4½ p. m.

☞ The morning Accommodation Trains from Norwich, and from Worcester, connect with the trains of the Boston, and Worcester and Western railroads each way.

The Evening Accommodation Train from Worcester connects with the 2½ p.m. train from Boston.

New York Train via Steamboat—Leave Norwich for Boston, every morning, except Monday, on the arrival of the stamboat from New York, stopping at Norwich and Danielsonville.

Leave Worcester for New York, upon the arrival of the train from Boston, at about 6½ p.m., daily except Sunday, stopping at Danielsonville and Norwich.

Freight Trains daily each way, except Sunday.—Leave Norwich at 7, and Worcester at 6 30 a. m. Special contracts will be made for cargoes, or large quanties of freight, on application to the superintendent.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y J. W. STOWELL, Sup't

LITTLE MIAMI RAILROAD.—OPEN TO SPRINGFIELD—Distance 84 miles—connecting at Xenia and Springfield with Messrs. Neil, Moore, & Co's. daily daylight lines of stages going east and north, to Columbus, Zanesville, Wheeling, Cleveland, and Sandusky City, via Urbana, Bellefontaine, Kenton, and the Mad river and lake Erie railroad, or Columbus, Delaware, and the Mansfield and Sandusky City railroad—forming, by these connections, the cheapest and most expeditious route to Buffalo, Niagara Falls, Rochester, Albany, New York, and Boston.

On and after Thursday, August 13, 1846, until further notice, a Passenger train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Old Town, Yellow Springs, and Springfield.

Returning, will leave Springfield at 4 hours 35 minutes A. M. A line of Hacks runs in connection with the Cars, between Deerfield and Lebanon.

FARE—From Cincinnati to Lebanon....$1 00
" " " Xenia..... 1 50
" " " Springfield.. 2 00
" " " Columbus... 4 00
" " " Sundusky city 8 00

The Passenger trains runs in connection with Brader & Gorman's line of Mail Packets to Louisville.

Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company, on East Front street.

Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for baggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freight paid at of a passage for every $500 in value over that amount.

The 1¼ P. M. train from Cincinnati, and the 2 40 P. M. train from Xenia, will be discontinued on and after Monday, the 10th instant.

A freight train will run daily.

47tf W. H. CLEMENT, *Sup't.*

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7¼ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5¼ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 26 hours, to Pittsburgh $10, and time about 32 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12 Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5¼ P. M from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

MANUFACTURE OF PATENT WIRE Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by JOHN A. ROEBLING, *Civil Engineer*, Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railroad, has now run 4 seasons, and is still in good condition. 2v19 1y

BALTIMORE AND SUSQUEHANNA Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at.....9 a.m. and 3½ p.m.
Arrives at.....9 a.m. and 6½ p.m.
Leaves York at.....5 a.m. and 3 p.m.
Arrives at.....12½ p.m. and 8 p.m.
Leaves York for Columbia at..1½ p.m. and 8 a.m.
Leaves Columbia for York at..8 a.m. and 2 p.m.

FARE.

Fare to York.....$1 50
" Wrightsville..... 2 00
" Columbia..... 2 12½
Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg.....$9
Or via Lancaster by railroad..... 10
Through tickets to Harrisburg or Gettysburg.. 3
In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at.....5½ p.m.
Returning, leaves Owing's Mills at.....7 a.m.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

CENTRAL RAILROAD—FROM SAVANnah to Macon. Distance 190 miles. This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—
On weight goods generally... 50 cts. per hundred.
On measurement goods..... 13 cts. per cubic ft.
On brls. wet (except molasses and oil).....$1 50 per barrel.
On brls. dry (except lime)... 80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unbored machinery..... 40 cts. per hundred.
On hhds. and pipes of liquor, not over 120 gallons.....$5 00 per hhd.
On molasses and oil.....$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission. THOMAS PURSE,
y40 Gen'l. Sup't. Transportation.

NEW YORK & HARLEM RAILROAD CO.—Winter Arrangement.

On and after Monday, November 23, 1846, the cars will run as follows:

Leave 27th street for 42d street, Deaf and Dumb Institute, Yorkville, Harlem Morrianna, and Williams' Bridge, at 7 o'clock a.m. From City Hall for above named places, 2 p.m. [freight train,] 2 30 p.m. 5 p.m. to Morrisiania only.

Leave City Hall for Harlem, Morrisiania, Fordham and Williams' Bridge, at 7 45 a.m., and 10 45 a.m.; 1 15 p.m., 2 p.m. [freight train], 2 30 p.m. and 3 45 p.m.

Leave City Hall for Hunt's Bridge, Bronx, Tuckahoe, Hart's Corners White Plains, Davis' Brook, Unionville and Pleasantville, [Pleasantville 4 miles from Sing Sing,] 7 45 and 10 45 a.m.; 1 15 p.m., 2 p.m. [freight train], and 3 45 p.m.

RETURNING.

Leave Pleasantville, at 8, 10, [freight train], and 11, a.m.; 1 30, and 4, p.m.

Leave White Plains, at 8 12, 10 30, [freight train] and 11 20 a.m.; 1 50, and 4 20, p.m.

Leave Tuckahoe, 8 35, 10 55, [freight train,] and 11 35, a.m.; 2 05, and 4 35, p.m.

Leave Williams' Bridge at 7 45, 8 50 and 11 50 a.m.; 2 50, 4, and 4 50 p.m.

Leave Morrisiania 8 and 9 05 a.m.; 12 05, 2 35, 4 20, 5 05 and 6 p.m.

Leave Yorkville, at 8 12 a.m.; 4 35 and 6 15 p.m.

SUNDAY ARRANGEMENTS.

Leave City Hall for Pleasantville and intermediate places, at 7 45 a.m.; 1 15 and 3 p.m.

Leave Pleasantville for City Hall, at 8 a.m.; 11, and 3 15 p.m.

Leave City Hall for Williams' Bridge and intermediate places, 10 45 a.m.; 2 30 p.m.

Leave Williams' Bridge for City Hall, at 8 50 and 11 50 a.m.; 1, 3 45 and 4 05 p.m. 1y49

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1847.

Summer Arrangement.

Philadelphia for Baltimore...8 a.m. and 10 p.m.
Baltimore for Philadelphia...9 a.m. and 8 p.m.
Connecting with Mail Lines North, South & West.

On Sundays, only the 10 P. M. Lines run.

The Boat Lines, via Newcastle & Frenchtown R.R.
Leave Philadelphia at 3½ p.m. } No line on Sun-
Leave Baltimore at 3 p.m. } day.

Accommodation Trains between Philadelphia & Wilmington.—Philadelphia to Wilmington, 8 a.m., *mail*, 12½ p.m., 4 p.m., 7 p.m., 10 p.m. *mail*. Wilmington to Philadelphia, 7 a.m., 1 p.m., *mail*, 4½ p.m., 7 p.m., 12½ a.m., *night mail*.

J. R. TRIMBLE,
2tf *Engineer and General Superintendent.*

GEORGIA RAILROAD, FROM AUGUSTA to ATLANTA—171 MILES. AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO OOTHCALOGA, 80 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 388 miles in length, from Charleston to Oothcaloga on the Oostenaula River, in Cass Co., Georgia.

RATES OF FREIGHT.		Between Augusta and Oothcaloga and Dalton. 250 miles.	Between Charleston, Oothcaloga and Dalton. 388 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot.....	$0 16	$0 26
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.....	0 45	0 70
	Cotton, per 100 lbs.....	0 45	0 65
	Molasses, per hogshead.	8 50	13 50
	" " barrel....	2 00	3 25
	Salt per bushel.....	0 17	
	Salt per Liverpool sack,.		95
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows...	0 75	1 37

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight may be paid at Augusta, Atlanta, or Oothcaloga.

J. EDGAR THOMSON,
Ch. Eng. and Gen. Agent.
Augusta, Sept. 2d, 1846. •44 1y

THE WESTERN AND ATLANTIC Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.
Atlanta, Georgia, April 16th, 1846. 1y1

CENTRAL AND MACON AND WESTERN Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlantic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20 pr. 100 lbs.	35
Crockery, per cubic foot	0 15 " "	35
Molasses and Oil, per hhd., (smaller casks in proportion).	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price, Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

GREAT SOUTHERN MAIL LINE! VIA Washington city, Richmond, Petersburg, Weldon and Charleston, S. C., direct to New Orleans. The only Line which carries the Great Southern Mail, and Twenty-four Hours in advance of Bay Line, leaving Baltimore same day.

Passengers leaving New York at 4½ P.M., Philadelphia at 10 P.M., and Baltimore at 6½ A.M., proceed without delay at any point, by this line, reaching Richmond in *eleven*, Petersburg in *thirteen and a half hours*, and Charleston, S. C., in *two days* from Baltimore.

Fare from Baltimore to Charleston.....$21 00
" " " Richmond..... 6 60

For Tickets, or further information, apply at the *Southern Ticket Office*, adjoining the *Washington Railroad Office*, Pratt street, Baltimore, to
1y14 STOCTON & FALLS, Agents.

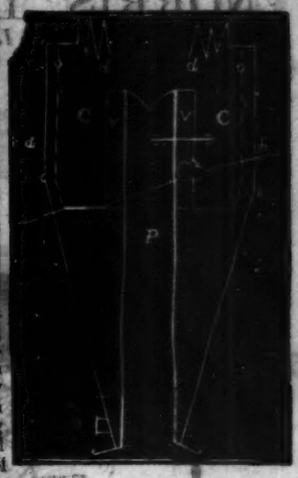
SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily.....$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia..... 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.
1y25 JOHN KING, Jr, *Agent.*

BACK VOLUMES OF THE RAILROAD JOURNAL for sale at the office, No. 105 Chestnut street.

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.



TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved SPARK ARRESTER, recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger and freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city or to Hinckly & Drury, Boston, will be promptly executed. FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co. Boston. ja45

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 2 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

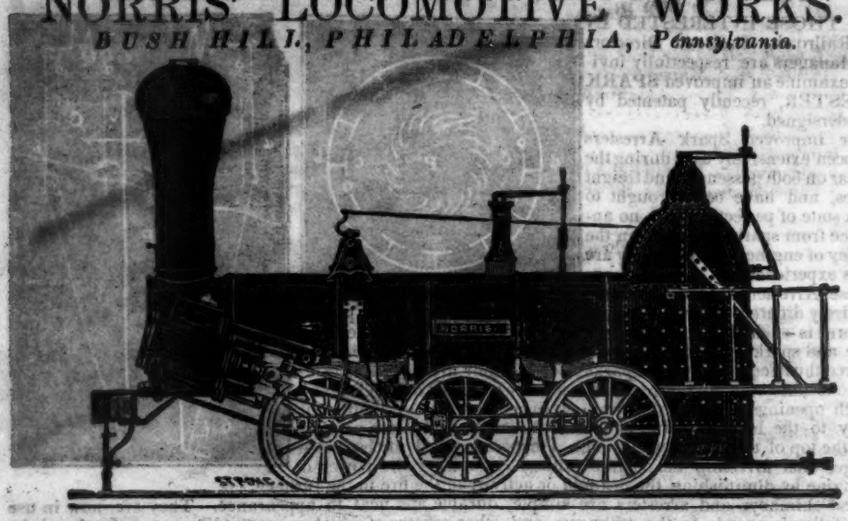
*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand. ja45

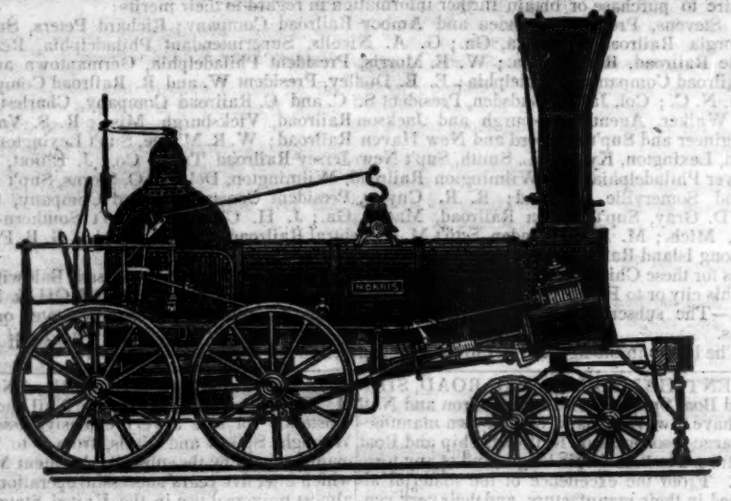
SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engagep in manufacturing Spring Steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent,*
1y [Albany Iron and Nail Works.

NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.





MANUFACTURE their Patent 6 Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15	inches	Diameter of	Cylinder,	× 20	inches	Stroke.
"	2,	14	"	"	"	× 24	"	"
"	3,	14½	"	"	"	× 20	"	"
"	4,	12½	"	"	"	× 20	"	"
"	5,	11½	"	"	"	× 20	"	"
"	6,	10½	"	"	"	× 18	"	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion.

Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

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KEARNEY FRIE BRICK. F. W. BRINLEY, Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

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J. M. L. & W. H. Scovill, Waterbury, Con.
N. E. Screw Co. Eagle Screw Co. } Provicence, R. I.
William Parker, Supt. Bost. and Worc. R. R
New Jersey Malleable Iron Co., Newark N. J
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Work shop, 86x35 feet, on the same floor with the pattern shop.

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Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

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Also—A lot of land on the canal, west side of Parker st., containiug 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

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PATENT INDESTRUCTIBLE WATER Pipes. The subscribers continue to manufacture the above PIPES, of all the sizes and strength required for City or Country use, and would invite individuals or companies to examine its merits.—This pipe, unlike cast iron and lead, imparts neither color, oxide or taste, being formed of strongly riveted sheet iron, and evenly lined on the inside with hydraulic cement. While in the process of laying, it has a thick covering externally of the same—thus forming nature's own conduit of stone. The iron being thoroughly enclosed on both sides with cement, precludes the possibility of rust or decay, and renders the pipe truly *indestructible*. The prices are less than those of iron or lead. We also manufacture Basons and D. Traps, for Water Closets, on a new principle, which we wish the public to examine at 112 Fulton street, New York.

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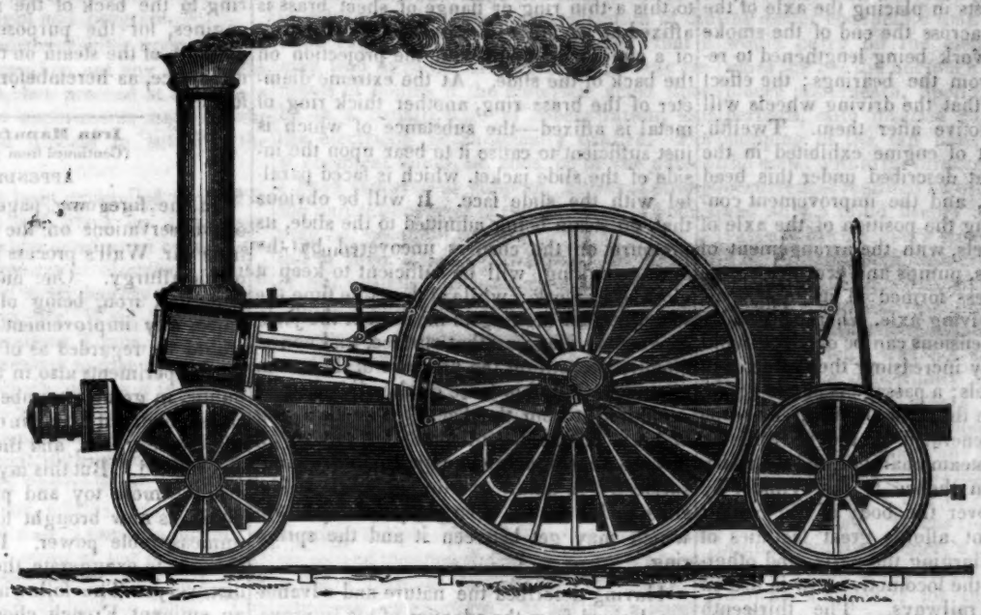
CRAMPTON'S IMPROVEMENTS IN LOCOMOTIVE ENGINES.



Specification of a Patent granted to T. R. Crampton, engineer, of Adam St., Adelphi, for certain improvements in locomotive engines. Patent dated August 25, 1846. Enrolled Feb. 25, 1847.—[Patent Journal.

This invention comprises 16 different improvements in the working or other parts of a locomotive engine, and are as follows: According to the first part, the patentee constructs his engine with the axle of the driving wheels placed at the end of the fire box, about midway between the top of the boiler and the under side of the fire box; and in order that the distance between the extreme wheels should not be too great, he shortens the fire box in a longitudinal direction—while at the same time an increased amount of fire box surface is obtained by extending the fire box under the driving axle, and also under the body, or tubular part of the boiler, which portion he forms as near as possible of the same shape as the boiler, when it does not interfere with the axle of the running wheel; second, he combines the use of an extended fire box, under the cylindrical part or body of the boiler, with engines having the axle of the driving wheels under the boiler; the axle is placed close in the angle formed by the fire box and boiler, the fire box being curved under the axle, and is extended some distance beyond it. The advantages of this combination are, that instead of having the fire box the whole length of the bars on the end of the boiler, it may be constructed much shorter, having by that means less overhanging weight, and at the same time retain an equal area of fire box surface. The third improvement consists in placing a spring parallel to the end of the boiler for supporting it from the axle of the driving wheels when placed in that position; the advantages of which are, that the fire box may be of larger dimensions of a narrow gauge railway, than when the springs are at the sides, from the room occupied by them; he states that he is aware that engines have before been constructed with a spring situate as herein represented, but states that it has always been in conjunction with the axle of the running wheels. Fourth, it consists in placing a spring across the body of the boiler in engines having the axle of the driving wheels placed under the boiler—the weight being supported by side rods, or supporters from the axle, to the ends of the springs;—this disposition of the spring enables him to obtain more room for the pumps and other gearing, and also gives greater facility for repairing the same, when such is necessary.—Fifth, he combines the use of outside eccentrics or return cranks for working the slide valves of locomotives, with such engines as are constructed with outside cylinders and straight driving axles placed behind the fire box; the return cranks or eccentrics are represented in our front cut, and consists of an arm which returns from the main crank pin, the centre carrying a joint at its inner end, on which the eccentrics are placed—or, if used as cranks, they must terminate in a position suitable for imparting the required motion to the slide valve. The reversing gear, it will be seen, is the same as that now generally used, and will, therefore, require no explanation. The sixth improvement is a combination of the outside eccentrics or return cranks, already explained with locomotive engines having the straight axle of the driving wheels placed under the body of the boiler; the advantages of which are, that the curve, or that part of the fire box which comes near the axle, can be brought much closer together than when the eccentrics are on the driving axle when so situate. Seventh, these improvements consist in having a fire box under the axle of the driving wheels, when such axle is placed on the end of the fire box (extending as before described) by which the firing is much easier conducted; this may also be used in conjunction with another door situated above the axle; the only alteration of the engines requisite, being the lowering of the foot plate below the level of the lowest fire door. The eighth improvement consists in placing the pumps and eccentrics for working the slide valves of locomotive engines on the outside of the framing—by which arrangement, easy access is had to the working parts, in the event of any repairs being requisite, and at the same time is always exposed to view, so that the engine driver can more easily see whether the gear is in correct working order. Ninth, he combines the use of an oval form of boiler with engines having the axle of the driving wheels placed behind the fire box—by which means he is enabled to have a boiler of much larger dimensions, where confined by the narrowness of the gauge without increasing the height of the centre of gravity by keeping the body of the same near the ground; he is aware that locomotive boilers have before been made slightly oval, perhaps to the extent of 3 or 4 in., such being considered the extent to which it could be carried without endangering the safety of the locomotive, by carrying the centre of gravity too high, the length of the oval being in the direction of its height; but by having the axle of the driving wheels situated as herein mentioned, the necessity of raising the centre of gravity is obviated by lowering the whole body of the boiler, and consequently the oval may be carried to the extent of 14 or 15 in., and even more—care being taken to strengthen it in proportion by means of stays inside the boiler. Tenth, he attaches the tender to the engine at the smoke box end, which has the effect of pushing it front; it is constructed to contain the water only, the receptacle for coke being on the top of the boiler, over the fire box: an apparatus is also constructed in connection with this arrangement, so that the engine driver can apply the

breaks to the wheels of the tender without leaving the foot plate. The eleventh improvement consists in placing the axle of the driving wheels across the end of the smoke box, the frame work being lengthened to receive support from the bearings; the effect of this will be, that the driving wheels will draw the locomotive after them. Twelfth, the arrangement of engine exhibited in the engraving, is that described under this head of the invention, and the improvement consists in combining the position of the axle of the driving wheels, with the arrangement of outside cylinders, pumps and eccentrics; the boiler has a recess formed in its upper part to receive the driving axle, whereby a boiler of moderate dimensions can be obtained without unnecessarily increasimg the diameter of the driving wheels; a passage is placed across this recess above the axle for the free escape of the steam generated in the body of the boiler, into the steam chamber, the steam being carried from thence to the cylinder by the steam pipe over the body of the boiler; this arrangement affords great facilities of working and enlarging the parts, and otherwise improving the locomotive now in use on narrow gauge railways. The thirteenth head relates to the combining outside cylinders, eccentrics and pumps, with engines having the driving axle placed at the end of the extended fire box; this arrangement admits of the fire box shell being carried much closer to the axle, and thereby effecting a saving of room—and renders the whole more convenient and compact, from the absence of eccentrics on the central part of the driving axle. Fourteenth, this is a certain construction of fire box, whereby he is enabled to make the cylindrical or body part of the boiler of much larger dimensions, and consequently to contain a greater number of tubes than can be employed in any other construction of locomotive boilers adapted for a gauge of 4 feet 8½ inches; the diameter of the boiler is such as to project beyond the extreme breadth of the running wheels; the centre, or greatest breadth of the boiler is placed above the pheriphery of these wheels, with which it does not therefore interfere; the smoke and fire boxes have suitable segmental projections at the upper part, where they are joined to the body, and thus a greater extent of tubular surface is obtained. Fifteenth, the coupling two locomotive engines with the fire box ends together. The tender is placed at the smoke box end of one of the engines so situate, each having suitable communications for obtaining the necessary supply of water; the advantages derived from this mode of coupling being that one set of men is sufficient for the working of both engines, and thereby effecting a great saving. The receptacles for the coke are placed over their respective fire boxes, as explained in a former part of this description. The sixteenth and last improvement is for preventing the entire back surface of the slides in locomotive engines receiving the pressure of the steam, which is productive of great and unnecessary friction: he constructs the slide with a raised ridge of metal on the back part thereof, the diameter of which is as large as can be described within the back surface of the slide; to this a thin ring or flange of sheet brass is affixed at its inner circumference, which is of a similar diameter with the projection on the back of the slide. At the extreme diameter of the brass ring, another thick ring of metal is affixed—the substance of which is just sufficient to cause it to bear upon the inside of the slide jacket, which is faced parallel with the slide face. It will be obvious that, on steam being admitted to the slide, its pressure on the corners uncovered by the spring packing, will be sufficient to keep it close to its work; while at the same time the steam acts on the ring of metal next the jacket, keeping it against that surface, and consequently preventing the pressure of the steam exerting any undue force on the slide face by excluding it from the back. The thin ring of brass admits of sufficient elasticity to allow for wear or any inequality in the rubbing surfaces. A small aperture is made in the slide jacket for the free escape of any steam which may get between it and the spring ring.

Having described the nature and advantages derived from the adoption of his improvements, he states that which he claims as new, and of his invention, is—first, the combination of an extended fire box, with a locomotive engine, having the axle of the driving wheels placed at the end of the fire box; second, an extended fire box under the cylindrical or main body of the boiler of a locomotive engine in combination with engines having the axle of the driving wheels under the boiler; third, the use of a spring placed parallel to the end of the boiler, supporting the boiler from the axle of the driving wheels; fourth, the use of a spring across the upper portion of the body of the boiler in engines having the axle of the driving wheels placed under the boiler; fifth, the use of outside eccentric or return cranks, for working the slide valves of locomotive engines in combination with engines having outside cylinders, with straight driving axles placed behind the fire box; sixth, the use of outside eccentrics in combination with engines having the straight axle of the driving wheels placed under the body of the boiler; seventh, the use of a fire door under the axle of the driving wheels; eighth, placing the pumps and eccentrics for working the slide valves of the engines outside the framing; ninth, the oval form for the body of the boiler, in combination with engines having the driving wheels placed behind the fire box; tenth, attaching the smoke box end of the engine to the tender containing the water;—eleventh, placing the axle of the driving wheels at the end of the smoke box; twelfth, the combination of outside cylinders, eccentrics and pumps, with an engine having the straight axle of the driving wheels placed in a recess in the boiler; thirteenth, the combination of outside eccentrics, cylinders and pumps, with engines having the driving axle placed at the end of the extended fire box; fourteenth, the use of a fire box with projections at the sides, adapted to receive a large diameter of boiler; fifteenth, coupling two locomotive engines at the fire box end; sixteenth, the adaptation of a spring metalic ring to the back of the slides of locomotive engines, for the purpose of preventing the pressure of the steam on the principal part of its surface, as hereinbefore described and set forth.

Iron Manufacture.

(Continued from page 313)

APPENDIX.

In the foregoing pages we have limited our observations on the advantages arising from Mr. Wall's process to only one branch of metallurgy. One and the chief motive was, that iron, being of paramount importance, any improvement in its manufacture would be regarded as of leading interest.—The experiments also in this case were more public, in greater number and variety, and, consequently, if called in question, could more readily be traced, and the truth satisfactorily ascertained. But this mysterious agent, hitherto the mere toy and plaything of philosophers, is now brought forward as a giant of unmeasurable power. In fact, it is hardly possible to exaggerate the importance of the discovery. The following are the words of an eminent French chemist, inserted in L' Annotateur, May 15, 1845:

"Mr. Wall, of London, has lately patented a discovery for improvements in the manufacture of iron and other metals, which promises greater results to society at large, than anything produced in the scientific world since the introduction of the steam engine. He has ascertained that the passing of a current of electricity through a body of metal, while in a state of fusion, has the effect, not only of clearing it of all evaporative substances, as sulphur, arsenic, phosphorus, etc., but effects a change in the molecular arrangement, and imparts to it at once a ductility and strength only obtainable hitherto after tedious and expensive processes. It was the celebrated Davy who first exhibited the power of voltaic electricity, by decomposing, with its aid, bodies until then deemed pure elements. 'Such is the power,' says this illustrious chemist, 'of analysis possessed by electricity, that the most seemingly insoluble compounds such as glass, sulphate of barytes, fluor spar, cannot resist its energy. Aggregates the most adhesive, the firmest compounds are unable to withstand, but yield up their elementary bases.' The results obtained by the great philosopher have not been lost, Mr. W. has carried them forward, and rendered them available to the purposes of industry. For on a minute examination of the experiments made by the latter, we shall perceive an analogy of reasoning, and a development of the same principle. * * * The advantages that this discovery must give to society, and the security of life and limb in those situations where both are daily and hourly exposed, on our railroads, as well as in steam vessels, and in machinery of every description, cannot be too well known. Mr. Wall has, we understand, obtained patents from several of the governments in Europe, and also in America. Nations the most advanced, as well as the backward in civilization, will

derive advantages from its adoption. In the former it will give a new impulse to genius and industry, to the latter it will unfold another source of light and progress.

We will not, however enter upon a fresh dissertation, nor lengthen out any further the list of testimonies, but proceed at once to a brief detail of the experiments made by the application of the process to some of the other metals.

"Titanium has been compelled to yield to this novel agent, and gives up its oxygen, hitherto refused when acted upon by most intense heat, to a stream of electricity issuing from a moderately sized battery. I submitted Titanium, says Mr. Wall, which is so called after the fabulous Titans, from its resistance to every attempt to fuse it, or change the condition in which we see it in our Museums, to a stream of voltaic electricity.—Finding by previous analysis, that some pig iron contained about eight per cent. of it, I had two bars, each two inches square, cast in sand. Through one, while in transition from the fluid to a solid state, I passed a current of electricity from a series of ten pairs of zinc and platinized silver plates, eight inches by four, for the space of half an hour. The other bar was left to cool without anything being done to it. I afterwards made a minute research on a portion (1000 grains) of each. In the electrised bar I found a dull white residue of about twelve per cent., which I took for silicon, but on a closer examination, it proved to be the oxide of titanium. I had the other bar as carefully analyzed, and found eight per cent. pure brilliant titanium along with silicon, without the least change either from the action of the fire or the acids. Thus this extraordinary metal gives up, in thirty minutes, its oxigen, which it has refused, though acted upon for years by the concentrated power of a huge blast furnace."—Results equally satisfactory followed experiments made on manganese, from which the oxygen was separated in the space of a few minutes. Copper, also, which refuses to part with its alloys, either to the scientific efforts of ingenuity, or the power of the refining fire, except at a great loss of the metal itself, is cleared of the sulphur, arsenic, etc., in less than an hour, even when opposing a mass of eight or ten tons to the action of the electric battery. Nor is any loss sustained by the metal beyond the riddance of those deteriorating associates: while it is rendered, as is obvious, more durable than the copper manufactured by the ordinary process. For to avoid the loss inevitably resulting from a prolonged attempt at purification, a great portion of alloy is generally left, forming, in conjunction with the metal, a sort of voltaic battery, which immersed as it were in a menstrum formed by the air and water, particularly salt water, operates a speedy dissolution. All the other metals are in like manner purified and rendered more serviceable for their different purposes by this beneficial agent. It is evident, also, how practically the above experiments confirm the theory of Sir H. Davy, develope the principles of electro chemical science, and establish the agency of the voltaic battery, as an instrument of analysis. Indeed, as a mode of analysis, we may, on a review of the above experiments, be allowed to indulge in the proximate realization of the hope expressed by that great man, 'that it may lead us to the discovery of the *true* elements of bodies, if the materials acted upon be in a certain state of concentration, and the electricity be sufficiently exalted. For if chemical union, he adds, be of the nature I have ventured to suppose, however strong the natural energies of the elements of bodies may be, yet there is every probability of a limit to their strength; whereas, the powers of our artificial instruments seem capable of infinite increase.'

BATTERIES, CONSTRUCTION AND MANAGEMENT.

As may be supposed, in the machinery used by manufacturing establishments, particularly those of iron, where everything is on so large a scale, the chief aim is to combine efficiency of operations with facility of management. On the other hand, science, thro' a morbid jealousy, and puerile assumption of dignity, delights in the use of mysterious terms, and too often endeavors to throw around trifles a fictitious importance, by means of pompous designations. What's in a name? may be asked; much, it will be answered, when the question refers to the rejection or adoption, the retarding or acceleration of any measure, dependant on the co-operation of untutored agents. Electricity, and electrical batteries are looked upon by the rough attendants of the puddling furnace and the rolling mill, as some strange and complicated machinery, adapted only for the cabinets of the theorist and philosopher.

The batteries, which Mr. Wall had till lately made use of in his process, were those adopted by modern science, and which, although very efficient, and easily managed by himself, he found to be too abstruse in principle, and too intricate in their construction for the generality of the workmen, and required a nicety of attention he could not succeed in obtaining. The circumstance proved a source of great anxiety, and frequent disappointment. Actuated by that great unobtrusive spirit, which is ever characteristic of true inventive genius, and which imagines, that what shines so clear to its own sight, cannot be hidden from others, he too often acquiesced in the co-operation of assistants, whose knowledge of electricity extended not beyond the mechanical arrangement of the battery, or, perhaps, more accurately, a *bodily* experience of its effects. An essential requisite might be absent, and it would not be missed; a material derangement might occur, and it would not be noticed. Instead of the alternate position of zinc and copper, a plate of zinc would be associated, side by side, with another of zinc, or copper with copper; or by the accumulation of zinc on the silver, the action would be confined to the cells, without the semblance of a spark at the poles. Other incidents would occur, still more strongly illustrating the inconvenience and risk attending the frequent arranging and taking down, indispensible in the employment of the ordinary batteries. The iron bars, to which were attached the pole wires, would sometimes be driven in heedlessly of direction, so as to come in contact with the tymp plates, which proving better conductors than the melting mass, would carry off the electricity. At other times the bar did not touch the metal, but was placed underneath, upon the damp plate, or, perhaps, only inserted partially in the clay stopping of the tap hole, without reaching the metal within the furnace. Such untoward occurrences required no ordinary forbearance, and only a mind deeply impressed with the value of the discovery would have persevered. The consequences, however, as affecting the claims of the process, and its adoption may be easily guessed; and prejudice, ever on the watch against any innovation in its long cherished system, was not slow to take advantage of the opportunity thus afforded. In several instances, where the indiscriminate apprehension, so commonly entertained by the workmen, against any improvement could be enlisted, the *new project*, as it was termed, was discontinued, and its expulsion from the works effected. It was represented as a mere amusement for science, a costly toy, fit to divert the Hall of the Royal Society, but of too delicate a structure for the rough hands of gaffers and puddlers. It might be plausible in theory, but it was not practicable. Its adoption would necessitate the engaging of a professed philosopher in every iron establishment, for the purpose of superintending its operations: and why derange the existing and long proved order of such collossal works for a something, on the results of which no reliance after all could be placed. Happily these objections have been removed. Mr. Wall has constructed a battery of the simplest form, which requires only the most ordinary knowledge and attention to arrange it; obviating all escape of electricity, and securing a full and unrestricted action. In it are dispensed with, that multiplicity of small plates, which required such nicety of arrangement, and which a slight agitation would disturb: and one continuous surface is exposed to the menstrum. From the peculiar arrangement also of the plates, and the increased extent of surface, the stimulents are not obliged to be so powerful. This battery may be placed in any part of the premises, and remain as a fixture, thus precluding the necessity of taking down and re-fixing, which is so annoying to the workmen, and incurs a risk of a misplacing of the bars, etc. Instead of the bars also being inserted anew in the tap hole or tuyere of the furnace an hour before each tapping, as in the case of other batteries, they are made fast to the back part or side of the tuyere in such a manner, that even in the event of their ends being burnt off, or other casualty, no interference takes place with regard to the effects produced within, provided the wires issuing from the battery remain attached. The same arrangement is made in front or on one side of the tap hole. The commonest workman, or boy, with sense enough to turn a screw backwards and forward, may put it in operation, and manage it with the greatest ease. A battery of this description, capable of acting efficiently on eight

to ten tons of fused metal at a time, does not exceed one-fifth of the price of a Smee's battery of one hundred pairs, eight by three and a half inches. Nor do these advantages of Mr. Wall's new battery interfere with its adaption to temporary operations, or render it less convenient for removal. It is already in use at some of the great iron works on the continent, where it has met with general approval. The description accompanying the drawing of this simple and efficient machine, both of which may be sent, on application from parties desirous of a lincense of the patent, will enable any ordinary workman to arrange it for operations, without any further assistance.

[The following Theory possesses such strong features of originality, and at the same time, appears so probable, that we cannot forbear giving it publicity. It will, moreover, further illustrate the magnitude of the power whose operations we have been narrating.—This universal agent, is seen by Mr. Wall in every change, chemical or physical, occurring in inert or active matter. The minutest particles, as well as the most gigantic aggregations possess their relative electric quantities, and in the event of any excess or diminution are thrown into a state of excitement, and so continue until the balance is restored.]

ON THE FORMATION OF ÆROLITHES IN CONNECTION WITH ELECTRICITY.—BY MR. WALL.

The electrical phenomena invariably coincident with volcanic eruptions, seem to have almost escaped notice, or at least, have been but slightly touched upon by philosophers. It appears to have been hitherto regarded as a something, surrounded by an inviolable mystery, repelling all approach of conjecture or discussion. It may have glared for a moment before the eye of the mind, but like the meteor itself, the impression has been but transient; it has passed on unexplained and forgotton. Although the theory which I here advance, may not ensure immediate conviction of its truth, I think there will be found strong features of probability. The hypothesis does not assume the existence of any properties of electricity, not previously recognised and already familiar to the experimentalist. The principles are obvious and require little elucidation to bring them within the reach of the most ordinary understanding. During the last two years, I have been engaged in realizing a plan I had discovered, for the application of voltaic electricity, in the manufacture of metals. The experiments which in great number and variety have been made at the great iron establishments throughout this country, and on the continent, have proved eminently successful, and respectable and competent witnesses have recorded their approval of the efficiency and utility of the process. During the course of those experiments, several phenomena occurred particularly interesting and illustrative of conjectures, which I had previously entertained respecting the nature and formation of meteoric bodies. These brilliant masses, which occasionally rush through our atmosphere, striking terror into the minds of the ignorant and superstitious, are suppose by some to be fragments of planets, disrupted, and thrown off by some violent concussion, or hurled from the volcanoes, reported to exist in the moon. I think, however on a closer view, we shall not be at a loss to find materials on our own earth, abundantly sufficient for the formation of these strange visiters, without being obliged to suppose them to have taken so long a journey. They are known to exist of an alloy of iron, with some neckel and chrome, with traces of other metals, and are generally invested with a vitreous glaze of earthy matter. The features evidently denote a volcanic origin, while I dispute the claims attributed to the volcanoes of the moon, as our own globe was not destitute of these apparently indispensible characteristics of a material world. These volcanoes, placed as they are in different parts of the earth, are doubtlessly its safety valves, and allow vent for those immense and eternal fires, which in the wise economy of nature are known to exist in the centre of the earth. Confirmatory of the view here taken of the purposes of these volcanoes, there is a circumstance worthy of notice. On examination of the dates of different eruptions, it has been a subject of remark, that the occurrences have taken place at alternately distinct periods. Thus, while the volcanoes at the two poles have been in agitation, those in the vicinity of the equator or in the intermediate zones, as Vesuvius, Ætna, etc., were in comparatively a quiescent state, and vice versa. But to proceed. It is natural to suppose that fires, such as those in the centre of the earth, reduce the ores, with which they come in contact, into a metallic state, and thus afford the supply of magnetic or electrical power to the atmosphere through the thannel or vent allowed by the volcanoes. Hence the vast electro magnetic concentration found to exist in the neighborhood of volcanic mountains, and which, in its intensity, is ever proportionate to the actual state of agitation or rest in the volcano. It is well known to those conversant with the operations of a foundry, and acquainted with the properties of heat, that portions of the most pondrous metals, when in combination with other matter of a volatile nature, are eliminated and dissipated like steam. While, therefore, fusion is progressing in these vast subterraneaus furnaces, iron in alloy with carbon and sulphur, and the semi-metals sure to be found there in excess, is carried off in minute particles, and, finding egress through the volcanic crater, is borne aloft simultaneously with the free carbon issuing in the form of smoke. But, notwithstanding the extremely minute division which has taken place, the nature of the affinities of these metallic atoms, remains unaltered, and they will coalesce on the first occasion which offers for a reunion. As long as the atmosphere continues in one uniform settled state, no change in their condition takes place; but one that the electric fluid, still pervading them, and holding them in the same, however extended, but continuous bond becomes disturbed, whether from excitation or alteration in the equilibrium of the positive and negative conditions, then the power which has kept them in a state of separation is overcome, and the atoms rush again into union. The phenomena indicative or at least coincident with such an occurrence, are strikingly observable. Whether formed from the vapors ascending from the earth, or the accumulation of evaporative matter of volcanoes, clouds of huge magnitude, and of a dark and lowering aspect, stretch athwart the heavens in irregular but determinite course towards the rendezvous, where their operations are about to commence. In these threatening masses of clouds, considerable friction or attrition takes place from the force of the winds, etc. While these forces are thus, as it were, preparing for the assault, a strong commotion is perceptible, which is nothing more than an adjustment of power, producing in the act of obtaining a due balance, the lightening flas, and thunder. The metallic particles are thrown into agitation, their affinities are excited, and they rush together. Thus, again united, they form a body outweighing the specific gravity of the atmosphere, and are consequently borne to the earth in the form so well know as thunderbolts, or meteors. The carbon, sulphur and phosphorus, and the other alloys, are at the same time combined, and accelerate and augment the ignition of the fiery ball in its course towards the earth; this course, although doubtless modified by accidental circumstances, has been generally remarked as bearing on an angle of forty-five along a meridian from north to south. These meteors often travel to a great distance, and fall in parts where there are no appearances of storm, or any change in the atmosphere. These remarks may not, as I before observed, be deemed conclusive, or sufficiently strong to establish the theory here brought forward; they are, in truth, from a conscious inability in expressing my ideas, merely thrown out as inducements to inquiry, and to elicit the opinions of others, far more competent to elucidate and decide on a subject, unquestionably interesting.

N.B. Though perhaps, not directly bearing upon the subject, above treated, I will note down another conjecture. May not the zigzag tracings observed on the magnetic chart, be attributed to the electric currents taking their course towards the various volcanic inlets, which give them the readiest access to the grand source of electro magnetic power, situated in the centre of the earth?

The total inefficiency of the compass, occurring about the latitude of sixty-seven degrees, are familiar to the navigator. It is probable that this instrument, dependant as it is on the electro agency so variously distributed throughout the globe, having passed beyond the range of the volcanic concentration of the electro magnetic power, becomes, in a manner paralyzed, or incapable of a fixed determinative direction. Electricity, is indeed present and continues to the pole itself, but in a comparatively dormant state, the eternal snows opposing an insurmountable barrier, to all excitation, or disturbance of equilibrium.

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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AMERICAN RAILROAD JOURNAL.

Published by D. K. MINOR, 105 Chestnut St., Philadelphia.

Saturday, May 22, 1847.

NOTICE TO CONTRACTORS.—ANDROSCOGGIN AND KENNEBEC RAILROAD. Proposals will be received at the Railroad Office, in Lewiston, until the 17th of June next, for the Grading and Masonry of the 1st Division of the Road, extending from the Atlantic and St. Lawrence Road in Danville, to Green centre, 14¼ miles.

Also, separately, for the Masonry and Woodwork of the Bridges across the Great and Little Androscoggin Rivers, the Bridges to be constructed on Towne's plan.

Plans and Profiles will be ready for examination, and the route shown, on and after the 10th of June.

Satisfactory surities will be required of bidders unknown to the officers of the company.

The 2d Division, extending to Snow's Pond in Belgrade, 25 miles, will be ready for contract about the 25th of July; and the remainder of the road to Waterville, about the 20th of September.

HOBART CLARK, Agent A. & K. R. R.
EDWARD APPLETON, Engineer.
Railroad Office, Lewiston, May 8, 1847. 4t21

THE SUBSCRIber has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY.
West Troy, May 12, 1847. 1y*21

Railroad to the Pacific.

We commence, in this day's Journal, the Speech of Mr. Whitney, (delivered in the New York Assembly Chamber on the 30th ult.,) upon his great scheme for a railroad to the Pacific. We shall publish it entire—as we believe it contains much information that will be readily appreciated, and because it gives the views of Mr. W. at length, upon his favorite plan for this immense work—which, at some day or other, will, without doubt, be accomplished—whatever may be the opinions in reference to it. We commend the Address to the notice of our readers.

Table of Railroads—Its Corrections, etc.

Thanks to the writer of the following letter, as it gives precisely the information desired to make the Table of *American Railroads* what we wish. It is dated "Transportation Office, Georgia Railroad and Banking Company, Augusta, Ga., May 1st, 1847," and says:

"Dear Sir: In your Table of Railroads, 'No 127, Georgia,' please change the Revenue for 1845 to $315,341 59, gross—and $179,137 85, net. The Revenue for 1846 is—gross, $409,935 46—net, $252,033 10. A Commutation is allowed.

"The western terminus of the Western and Atlantic railroad, (No. 130) should now be entered *Dalton*, instead of 'Oothcaloga;' the length 100 miles, instead of '80;' the maximum grade 33 feet, instead of '30;' and the fare per mile 5 cts., instead of '5½.'

"Another railroad, which you have not noticed, called Memphis Branch railroad, is in the process of construction, and will be put in operation in less than one year, from Kingston, Ga., to Rome, Ga.—Length, 17 miles; flat bar, 2½ x 8; single track.

"Respectfully your obedient servant,
"F. C. Arms."

Niagara Suspension Bridge.

The following are the estimates of the revenue which it is supposed this work will yield when completed:

"In furtherance of the proposals that have been made for the erection of the bridge, capable of sustaining cars, etc., equal to 500 tons weight, at a cost of $200,000, the following estimate has been made to show the advantage of the projected work, as a profitable investment of capital. To the estimated cost of construction, we may add $25,000 more, to purchase land, buildings, etc., making the total cost of bridge, etc., $225,000. It is estimated that the Lake passengers, to and from Buffalo, amount to 1,000,000 yearly. Assuming that one-fifth of the number going to and fro, should cross the suspension bridge and Great Western railroad, the number thus given, would be 200,000
Add for visitors to the Falls and local travellers 100,000

Probable number of travellers who would cross the bridge in a year 300,000

Receipts from 300,000, at 12½ cents each ... $37,500
Merchandize, cattle, etc., say 12,500

Probable revenue of the bridge $50,000
Which, on the cost of $225,000, would be over 52 per cent."

Iron in Alabama.

We learn from the Tuscaloosa Monitor, that a bloomery will soon be established near that city, for the manufacture of hollow ware and other descriptions of iron castings. In Bibb, Shelby and, Talladega counties, bloomeries and forges have been in operation for some time; in the two former for a number of years—and the results so far are highly encouraging. The Monitor states that beds of the finest ore are found to an incalculable extent in Tuscaloosa county, and it is ascertained to be superior to any in the south or west. An ironmaster of Tennesee gives it the preference both for quantity and quality.

Outlet Lock at New Hope.

We learn from the Trenton State Gazette that the long desired communication between the Delaware Division of the Pennsylvania Canal, and the Feeder of the Delaware and Raritan Canal is about to be effected. It will contribute in no small degree, to the prosperity of this city, of the Delaware and Raritan Canal, and of the Lehigh Coal Companies.

The Pennsylvania Canal Commissioners were required, by an act passed in April, 1846, to make an outlet lock near Well's Falls, as soon as $20,000 should be loaned the State for that purpose, at an interest of 5 per cent. to be paid out of a revenue raised by a toll of $1 on every boat passing through the lock. The loan has been raised, and the construction of the lock commenced.

The Delaware and Raritan Canal Company have also begun to make a corresponding lock in their feeder, opposite this outlet lock; and boats can cross the river from one lock to the other. A few rocks only must be blown out of the way. A dam, however, would have been better, but our legislature has refused to consent to its construction.

This improvement will shorten the distance from New Hope to Trenton, 26 miles, and make a saving of 52 miles in each trip of every boat from the Lehigh to New York and back. It will save the detention now caused by passing 14 locks twice, and the expense of steam-towing between Bristol and Bordentown. Each trip will, it is supposed, be shortened three or four days. A large portion of the trade of the Lehigh will take this course to New York, and the revenues of the state and the canal company be materially increased. Our farmers on and near our canal will feel the advantage too, of a direct communication with the lime-kilns on the Pennsylvania Canal.

We have not learned at what time this improvement will be completed, but presume it will be finished within this year.

Ocean Steam Navigation.

The New York Herald says the splendid steamship Washington is completed in all her parts, and will sail from that port on the first proximo, with a goodly number of passengers, among whom will be the Hon. Richard Rush, our newly appointed Minister to France, several other distinguished gentlemen, and as much freight as she can carry.

The Washington is the pioneer of the first American line, which will consist of four vessels in all, each equal in every respect to the Washington. The building of the second is progressing with due speed, and before the year 1848 all of them will have been completed, and running between New York and Southampton, and Bremen.

The first day of June, we have said, is the day fixed for the Washington to sail. On the same day, one of the new French line of steamers will leave Havre for New York. This latter line will also be composed of four vessels; so that these two lines will compose eight vessels plying directly to that port, commencing on the first of next month. After these lines will have been in operation, we shall have the new Cunard line, and the new American line, of which E. K. Collins, Esq. is the principal, each of which will be composed of four vessels likewise. These will commence early in the year 1848.

Recapitulation.

Ocean Steam Navigation Co.,	4
French line,	4
Collins' line,	4
New Cunard line,	4
Total number of steamers,	16

Thus, sixteen steamers will ply regularly between the port of New York and the old world, by which we will have a weekly communication with England, France, and other countries, independent of the Boston line of four steamers.

Telegraph to New Orleans.

The agent of the Telegraph line from Washington City to New Orleans, has arrived at the latter place, with an engineer, after having examined the route between that place and Mobile, and the work will be commenced immediately, with a strong force of laborers—the wire cord and other materials are in a state of preparation, and will shortly be shipped at New York.

The State of Virginia has, by a Legislative act, subscribed for $30,000 of the stock, and the contractors have arranged with the board of public works, to construct the work through the State to the North Carolina line along the railroads. The work is rapidly progressing through the State of North and

South Carolina, where a large force is engaged on the different sections.

James River and Kanawha Company.

At an adjourned meeting of the Stockholders of the above company, held on Friday evening last, it was resolved and adopted, as we learn from the Richmond Times, that the salary of the President be reduced from $2500 and travelling expenses, to $2000. That the salary of the Secretary be reduced from $2000 to $1500. That the salary of the Assistant Clerk be reduced from $900 to $500. That the salary of the Chief Engineer be $3500, and travelling expenses.

Major Walter Gwynn was elected Chief Engineer. Mr. Wm. B. Chittenden was unanimously elected President. Mr. C. O. Gerberding was unanimously elected Secretary of the Company in place of Mr. Chittenden, chosen President.

An interesting discussion took place on the subject of the salary of the President and Chief Engineer, and the propriety of conferring both offices on the same person. It was finally decided, as the resolutions indicate, to separate the offices.

Tunnelling the St. Lawrence River.

The railroad from Boston to Ogdensburg will cross Lake Champlain at Rouse's Point—near the Canada line—by a bridge 3,880 feet, the longest ever projected in this country. The depth of water will not exceed 20 feet. After reaching Missisquoi Bay the road will run to the village of Swanton, and thence through St. Albans, to Burlington, where it will form a junction with the two roads now building to connect that place with Boston. Rouse's Point is 20 miles distant from the St. John's railroad at Laprairie opposite Montreal. The two roads can easily be united by an easy grade.

"With a view of connecting Montreal with the Boston road"—says a late number of the Monroe Democrat—"a charter was granted a year since to build a bridge over the narrowest part of the St. Lawrence, 1,500 feet long, and of sufficient height to allow vessels to pass beneath. Many persons in Montreal, well qualified to judge, suppose this to be impossible on account of the great height, the rapid current of the river, which runs at the rate of six miles an hour, and the rush of ice in the spring.—The cost will not be less than one million of dollars. The feasibility of this project has caused much discussion in Montreal, and given rise to a new plan of avoiding the river by a *tunnel*, the feasibility of which can scarcely be doubted, as the bottom is of rock, that can be easily worked. Tunnelling is common in Europe, where many canals and railroads pass through hills and under streams. In this country, the Baltimore and Ohio, as well as the Albany and Boston railroads, pass through tunnels. The first tunnel made in England was constructed by Brinley, who run a canal through a hill uniting the valley of the Weaver with that of the Trent. The work was so constructed that only small boats could be propelled by the boatsmen lying on their backs and pushing along with their feet. It was, however, a great improvement on the pack horse system of passing the mountains.

"There is at Worsley a canal under ground nine miles long, the termination of which is in the coal mines. When the Duke of New Castle was constructing it, the people thought him insane; but it has yielded a handsome income on its cost. The first tunnel, properly speaking, on a large scale, was made by the Liverpool and Manchester railway company, under the direction of the well known engineer, Stephenson. It is 2,750 feet long, 25 wide, and 25 high. After that was completed, tunnels became common. The longest in the world, is on the Manchester and Leeds railway, through a chain of mountains, familiarly called the 'Backbone of England.' How to cross this chain, was a problem from the days of the Romans, down to the time that the company referred to, bored them through with a tunnel two and a half miles long, cut most of the way through solid rock. Above the opening, the mountain is, in many places, 800 to 1000 feet high. The Lancashire and Carlisle road passes through a tunnel, the construction of which is considered the great achievement of the age in this species of engineering, on account of the solidity of the rock bored through.

"The proposed tunnel, under the St. Lawrence, at its narrowest part, near St. Helen's Island, will be about one-third of a mile from shore to shore, and about one-third the length of the principal tunnels in England. The depth of the water in the river above is 43 feet. The work would be an achievement creditable to Canadian enterprize; and we have no doubt, from the spirit manifested already, that the project will be carried into effect."

Railroads in Massachusetts.

Twenty years ago, Mr. Nathan Hale, Editor of the Boston Daily Advertiser, wrote a series of articles on railroads, showing their superiority to all other modes of travel, both for freight and passengers—their importance in reviving the declining trade of that city—and the certainty of their proving a safe investment for capitalists. For a year or two the subject met with no favor in any quarter. It was considered so visionary and ridiculous, that it was difficult for two persons to discuss it face to face without laughing. When the Legislature met, a progressive member from Lowell, with great presumption, moved the appointment of a committee to inquire into the expediency of surveying a route for a railroad between Boston and Lowell. It was received with all sorts of scoffs, gibes and ridicule.—One "country member" moved to amend it, by adding another survey from Boston to the *moon*, the latter being considered quite as feasible and important as the other. The Legislature was inexorable, and refused to grant a cent for any surveys. To quiet the clamors of some half-dozen of what were considered very fussy individuals, they were sanctioned as a sort of self-appointed committee, to collect facts on the subject *at their own expense*, and report to the next Legislature.

During the summer the committee were industriously engaged—the successful opening of the Birmingham and Manchester railway arrested public attention—Mr. Hale devoted his talents, and a liberal portion of his paper, to urging the importance of the subject, and as the Daily Advertiser was an old conservative journal, considered generally infallible by capitalists, the project gradually appeared more reasonable; and at the next session of the Legislature, a company was incorporated to construct a railroad from Boston to Worcester, and Mr. Nathan Hale was elected its first President. After numerous delays, disappointments, and attempts by many of the discouraged stockholders, to discontinue or suspend the work, during the financial embarrassments that followed General Jackson's "removal of the deposits," it was opened on the 6th of July, 1835, and the most brilliant results followed. A new company was incorporated, which pushed it on to Springfield, and eventually to Albany; and other lines were rapidly formed to Lowell, Providence, Portland, etc., diverging from Boston as a centre, to almost every point in the compass.

There are now fifteen different railroad companies in the State, owning 710 miles of road, built at a cost of about $30,000,000, each paying dividends ranging from six to ten per cent. per annum. The stocks of railroads have the preference by all classes who are seeking to make permanent investments.—Their stupendous results in a pecuniary, moral and social point of view, are too well known to require a remark.

Copper Mines in New Jersey.

The immense stores of mineral wealth in our country are being daily brought to light, and the subject has already excited much interesting research and scientific attention. The great copper beds of the northern lakes bid fair to produce millions to the government, under the recent action of Congress, and we perceive that the Canadian Parliament has adopted a system of regulations looking to the encouragement of enterprize in opening mines on the British side.

Recent operations, says the Pennsylvanian, have opened the eyes of capitalists to the mineral wealth of our immediate sister State, New Jersey. We have already alluded to the Flemington copper mines, now in successful operation, and in the hands of the present company, promising to be a most valuable investment. An article in the New York Tribune, gives a graphic and interesting description of a discovery recently made in another section of the same state, based upon a recent visit to the spot, made by the editor of that paper, Mr. Greely, whose opinions, we believe to be honest and sincere. He has taken great pains to examine the Allegheny mines, and his report is certainly very flattering.—To all who have any desire to embark in such an investment, opinion like this is useful in the extreme—for there is often too little examination and prudence, and too much disposition to be carried away by a desire to amass large profits at once.

We understand that specimens of the Allegheny copper ore have been smelted at Flemington, which have produced over 32 per cent. Several of our scientific men have made essays, and with most flattering results.

While upon this subject, the following from the North American, of a late date, may be interesting:

"As there appears to be a good deal of anxiety in regard to copper mines at present, we give the following from the Tribune, copied by that Journal from a London paper. In speaking of the discoveries of gun cotton, and the use of ether in surgical operations, the editor says:

"'The third discovery of 1846, is perhaps even of greater importance than either of the former. We allude to the lately patented process for smelting copper, by means of electricity. The effect of this change will be quite prodigious. It produces, in less than two days, what the old process required three weeks to effect. And the saving of fuel is so vast, that in Swansea alone the smelters estimate their annual saving in coals at no less than five hundred thousand pounds. Hence it is clear that the price of copper must be so enormously reduced as to bring it into use for a variety of purposes from which its cost at present excludes it.

"'The facility and cheapness of the process, too, will enable the ore to be largely smelted on the spot. The Cornish mine proprietors are anxiously expecting the moment when they can bring the ore which lay in the mine yesterday, into a state to be sent to market to-morrow; and this at the very mouth of the mine.'

"This discovery will be very valuable here if the mines in New Jersey prove productive and lasting. We see, by the way, that the editor of the Tribune has just paid a visit to the Allegheny copper mine, and has returned with a good opinion of it."

MASSACHUSETTS ANNUAL RAILROAD REPORTS.

Return of the New Bedford and Taunton R.R., under the Act of April 16, 1846.

Capital stock		$400,000
Increase of capital since last report		
Capital paid in, per last report	400,000	
Capital paid in since last report		
Total amount of capital stock paid in	400,000	
Funded debt, per last report		
Funded debt paid since last report		
Funded debt, increase of, since last report		
Total present amount of funded debt		
Floating debt, per last report		
Floating debt paid since last report		
Floating debt, increase of since last report		
Total present amount of floating debt		
Total present amount of funded and floating debt		
Average rate of interest per annum on do.		

COST OF ROAD AND EQUIPMENT.

For graduation and masonry, per last report	139,438 37	
For graduation and masonry, paid during the year,	406 56	
Total amount expended for graduation and masonry		$139,844 93
For bridges, per last report	5,013 85	
For bridges, paid during the past year		
Total amount expended for bridges		5,013 85
For superstructure, including iron, per last report,	144,049 98	
For superstructure, including iron, paid during the the past year	418 58	
Total amount expended for superstructure, including iron		144,468 56
For stations, buildings and fixtures, as per last report, [$18,640 81—$5,700 00	12,940 81	
[There has been charged to earnings of railroad, and credited construction account, for depreciation of buildings, $5,700 00]		
For stations, buildings and fixtures, paid during the past year	6,353 42	
Total amount expended for stations, buildings and fixtures		19,294 23
For land, land-damages and fences, per last report.	68,285 70	
For land, land-damages and fences, paid during the past year	242 09	
Total amount expended for land, land-damages and fences		68,527 79
For locomotives, per last report	20,581 66	
For locomotives, paid during the past year.		
Total amount expended for locomotives		20,581 66
For passenger and baggage cars, per last report	12,435 27	
For passenger and baggage cars, paid during the past year		
Total amount expended for passenger and baggage cars		12,435 27
For merchandize cars, per last report	10,133 67	
For merchandize cars, paid during the past year	1,142 13	
Total amount expended for merchandize cars		11,275 80
For engineering and other expenses, per last report.	34,998 98	
For engineering and other expenses, paid during the past year		
Total amount expended for engineering and other expenses		34,998 98
Total cost of road and equipment		456,441 07

CHARACTERISTICS OF ROAD.

Length of road	20·13 miles.
Length of single track	20·13 miles.
Length of double track	
Length of branches owned by the company, stating whether they have a single or double track	
Weight of rail per yard in main road	56 pounds.
Weight of rail per yard in branch roads	
Maximum grade, with its length in main road	40 ft. per mile for 1·51 m.
Maximum grade, with its length in branch roads	
Total rise and fall in main road	168 feet; 193 feet.
Total rise and fall in branch roads	
Shortest radius of curvature, with length of curve in main road	1906 feet in 1100 feet.
Shortest radius of curvature, with length of curve in branch roads	
Total degrees of curvature in main road	160 deg.
Total degrees of curvature in branch roads	
Total length of straight line in main road	17¼ miles.
Total length of straight lines in branches	
Aggregate length of truss bridges	None.
Whole length of road unfinished on both sides	"

DOINGS DURING THE YEAR.

Miles run by passenger trains, [on New Bedford & Taunton and Taunton branch road, with company engines, 59,188; on Boston and Providence road, with their engines, 30,048]	89,236
Miles run by freight trains, [on New Bedford and Taunton and Taunton branch road, with company engines, 19,400; on Boston and Providence road, with their engines, 14,976	34,376
Miles run by other trains	204
Total miles run	123,816
Number of passengers carried in the cars	94,167
Number of passengers carried one mile	1,516,418
Number of tons of merchandize carried in the cars.	11,013
Number of tons of merchandize carried one mile	218,817
Number of passengers carried one mile, to and from other roads	1,349,478
Number of tons carried one mile, to and from other roads	10,113
Average rate of speed adopted for passenger trains, including stops	2¼ minutes per mile.
Average rate of speed adopted for freight trains, including stops	3 " "
Estimated weight in tons of passenger trains, including engine and tender, but not including passengers, hauled one mile	1,547 600
Estimated weight of merchandize trains, including engine and tender, but not including freight, hauled one mile	876,400

EXPENDITURES FOR WORKING THE ROAD.

For repairs of road, maintenance of way, exclusive of wooden truss bridges and renewals of iron	$10,928 65	
For repairs of truss bridges		
For renewals of iron, including laying down	419 85	
For wages of switch-men, gate-keepers and flag-men	541 93	
For removing ice and snow		
For repairs of fences, gates, houses for flag-men, gate-keepers, switch-men, tool-houses		
Total for maintenance of way		$11,881 43

MOTIVE POWERS.

For repairs of locomotives	2,233 39	
For new locomotives to cover depreciation	1,566 32	
For repairs of passenger cars	613 56	
For new passenger cars to cover depreciation		
For repairs of merchandize cars	789 11	
For new merchandize cars to cover depreciation	907 25	
For repairs of gravel and other cars		
Total for maintenance of motive power		6,109 66

MISCELLANEOUS.

For fuel and oil	9,048 41	
For salaries, wages and incidental expenses, chargeable to passenger department	6,004 85	
For salaries, wages and incidental expenses, chargeable to freight department	4,322 23	
For gratuities and damages	229 00	
For taxes and insurance	108 00	
For ferries		
For repairs of station building, aqueducts, fixtures, furniture		
For interest		
For amount paid other companies in tolls for passengers and freight carried on their roads, specifying each company, [Taunton branch]	48,618 48	
For amount paid other companies as rent for use of their roads, specifying each company		
For salaries of president, treasurer, superintendent, law expenses, office expenses of the above offices, and all other expenses not included in any of the foregoing items	3,674 54	
		72,005 51

INCOME DURING THE YEAR.

[Received from Taunton branch railroad corporation, under agreement with them,]	8,617 35	
For Passengers:		
1. On the main road exclusively, including branch owned by company	8,347 42	
2. To and from other roads, specifying what: [Fall River $10,846 98; [Taunton branch 71,061 06	81,908 04	
For Freight:		
1. On main road and branches owned by company.	1,906 65	
2. To and from other connecting roads:	31,050 44	
U. S. mails, $1,940. Rents, $65. Interest, $103 92.	2,108 92	
Total income		133,968 22
Net earnings after deducting expenses	43,971 72	
DIVIDENDS.	30,000 00	
Surplus not divided	8,271 72	
Surplus last year	59,585 71	
Total surplus		67,857 43

ESTIMATED DEPRECIATION BEYOND RENEWALS, VIZ:

Road and bridges	20,000 00	
Buildings		
Engines and cars	7,800 00	
		27,800 00

The company are now relaying the sleepers on the road, and have contracted for a number of new passenger and freight cars.

No fatal accident has occurred to any passenger, or other person, during the year.—One passenger only has been injured, caused by his attempt to enter the cars while in motion; being a poor man, travelling with his family, the company voluntarily paid the expense for board and physician's bills, until his recovery.

The directors have returned, as far as they are able, from the books of the company, all the items required by the act of April 16th, 1846. They find it impracticable to return in detail, other items required by said act, for the reason that the accounts and records of the company have not been kept with a view of ever being called upon to answer such minute inquiries. All which is respectfully submitted.

David R. Greene, Ward M. Parker, Thomas Mandell, Matthew Luce.

Railroad to the Pacific.

[From the Albany Evening Journal.]

SPEECH OF MR. WHITNEY.

The following is a sketch of Mr. WHITNEY'S remarks in the Assembly Chamber, on the evening of the 30th inst.:—

The object of my having asked this indulgence, gentlemen, is, that I might have an opportunity of explaining to you a project for a Railroad from Lake Michigan to the Pacific Ocean. I will first give the progress of this project. It has been before the public for nearly three years. I presented a memorial to the last session of 28th Congress, praying for a grant of the public land sixty miles wide from Lake Michigan to the Ocean, with which, by sale and settlement, to build this road. A committee of that body gave a unanimous report in its favor, recommending it to the people, and recommending the public lands as the only means for such a work. During the summer of 1845, I explored and examined a part of the route. My object, to examine the soil and surface, and ascertain what part of the route (then not fully known) was feasible for a road, if the lands would be likely to sell and settle, and produce means for the work; if material, timber, stone, etc., could be had on the route, and if the streams could be bridged, and where. The soil and surface far exceeded my expectations; timber on the border of the Lake, and a little 90 miles west of the Mississippi; then none on to the Rocky Mountains. The streams can be bridged; the Mississippi at or near Prairie du Chene, and the Missouri at above Council Bluffs, but at no place below that point.

At the commencement of the 29th Congress I again present a memorial, praying the same object, which memorial was referred to the committee on public lands in the Senate; the subject was thoroughly examined in all its bearings, and the committee unanimously reported in its favor, and introduced a bill, granting the land prayed for; the bill passed to a second reading, and ordered printed with the report. No further action had at that session. During the last session, the committee, though composed in part of different members, was unanimous in its favor; but it being a short session, the Mexican war and other exciting subjects, prevented action. Strong expressions in its favor have been made throughout the country by the Public Press almost universally, by public meetings in many of our large cities, and resolutions by Legislatures of several States. Yet the work is so large, promising such vast results, that the mind in many instances is frightened from a fair investigation of the project and the simplicity of the work itself. I start upon the ground that no work, no enterprise, is too great, too magnificent, when dependent alone upon the labor of man for its accomplishment, furnishing itself the sure and sufficient reward for that labor. I will now, gentlemen, proceed in my plain and simple business manner (as you will have perceived I am not a public speaker) to explain this great project; a work promising such vast results as to almost overwhelm the mind; yet I hope to make it appear plain and simple.

The first consideration for any work or project is its feasibility and means to carry it out.

Its feasibility I will first explain. We all know the topography of the Mississippi Valley or Basin, that from the great Lakes to the Gulf, and from the Rocky Mountains to the base of the Alleghenies, is one inclined plain, without rock, mountain, or even hill, and without impediment to the construction of a road, except where the streams cannot be bridged, and where the bottom lands are too wide and too soft for such a work.

From the Lake to the Pass in the mountains a road may be built on a straight line by compass if you please; from the Lake to the Mississippi the grade for any one mile would not exceed 25 feet—thence to the Pass the average is about 6 feet—thence to the ocean the route is more difficult though perfectly feasible; as was shown from the Senate's committee report, taken from the report of Colonel Fremont, who measured the elevations daily from the Missouri to the navigable waters of the Columbia River; and from other travellers, from which Mr. Whitney read extracts, full and clear, showing the route to be feasible, as by the words of the committee:—"A consideration of the facts in the premises, therefore, leaves no doubt of the practicability of the proposed route for a Railroad from the shore of Lake Michigan to the navigable waters of the Columbia River." He said, this point seems settled. The means for the accomplishment of the work. It is not at all probable that Congress will ever appropriate money for such a work; and there are serious objections to the carrying on of such a work by the Government. In the first place it would require years to complete a survey, and then the route must be fixed upon by Congress, and most likely the work would never be commenced, and surely, like the Cumberland Road, never completed. I do not ask or require a survey—I do not ask for one dollar of money—and can commence the work as soon as the grant is made. The route from the Lake to the River could be fixed upon and the work commenced without delay; to the mountains the route well known; and while the work is progressing from the Lake the entire route could be examined, surveyed and fixed upon.

It is a work beyond the power of individual enterprise, nor can it be done by States not formed. An entire wilderness, it becomes absolutely necessary to connect the settlement of the country with the building of the road.

I have sought, and believe have matured a plan which shall leave with Congress the power of control, and of holding all as security, making it a national road, while at the same time the work could be carried on as an individual enterprise, freed from the immmense government patronage, which, as a government work it would create, and, also, freed from the delays, expenses, and insurmountable difficulties sure to arise from constant Legislative changes of direction. I ask Congress to set apart (not grant to me) 60 miles wide of public land from Lake Michigan to the Pacific Ocean, for this especial purpose. I make the starting point from the Lake because, first, as the road would add value to the lands; and, as the land is the only source of means, the road must be located where the land on its line could be applicable to it. Land distant from the road could not be made available, and therefore the project would fail.

There are other important reasons why this should be the starting point. It is all important to have a cheap and direct water communication with the Atlantic, while the road is being built, to take laborers, settlers and materials to the starting point; to have easy communication with a settled country around, to furnish food for the laborers and settlers. It is necessary to have timber and other material convenient; and there is timber on the borders of the Lake, and could be taken on by the road: but from any other starting point on either the Mississippi or Missouri rivers, the difference in cost of transportation for the material alone forbid the commencement of the work. And it is all-important that the starting point should be from where timber can be taken by the road for the settlers, for buildings and fences; for that immense distance of 1,200 miles where there is none, and could not be got there except by the road. From the Lake to the Mississippi, somewhere between Milwaukie and Green Bay, nearly the 60 miles wide can be found unoccupied.

From the Mississippi through to the ocean an entire wilderness. From the Lake onward for 800 miles, the land is of the very best quality for the production of breadstuffs, the surface beautiful, without rock or mountain, or even hill, just enough rolling and descending to let the water off, all covered with a rich grass for grazing or harvest, and enough for millions of cattle; no preparation wanted for a crop; the farmer wants but the plough, the seed, the scythe, and the sickle. About 300 miles of this 800, except on the border of the lake, there is timber only sufficient for agricultural purposes, buildings and

fences, the other 500 miles, and so onward to the mountains, entirely without timber, but as there is an abundance of coal all to the mountain, and timber in the northern part of Wisconsin, it can be taken on by the road at low tolls sufficient for building and fences, to places where there is none, cheaper than the land could be cleared; so that for settlers, particularly those from Europe, with the road, it is better without than with timber, but without the road can never be settled. After the 800 miles to the pass in the mountains, the land is represented as very poor, but I am inclined to believe the facilities which the road would create must render a part of it productive and useful.

From the Pass to the Ocean, I am disposed, from the information I have been able to procure, to believe there are more lands suitable for culture and grazing than we have inferred from different writers.

It is estimated that the road will be, from the Lake to the Ocean, 2,400 miles; that it will cost for a good road, heavy rail, $20,000 per mile, and except this side the Missouri, cannot produce any income until all is completed, and must be kept in operation, for its own use, will cost, operations, repairs and all, when completed, $70,000,000—the 2400 miles, by 60 wide, together 92,160,000 acres, one half of which is considered as worth little or nothing without the road, but it is believed the road will enhance the value so as to produce the sum required. This, then, gentlemen, is the capital stock for this great work, to be brought into life and use by the work itself.

It will be seen that the entire project depends upon the 800 miles of land on the first part of the route, which is fast being taken up by settlers, and will soon be so much so as to defeat the project forever; for I do not believe there can ever be any other means than the lands, and when they are gone all is gone—more than 1200 miles without timber, mostly very poor land, and can never settle without the road to give the only means of communication with civilization and markets. I will now give you the simple plan by which I propose to carry out this great work.

As I have said before, I do not ask Congress to grant to me even one acre of land until the road is completed in advance. I first build 10 miles of road at my own expense, which will cost $20,000 per mile; one mile of the land 60 miles wide is 38,400 acres, allowing for waste land and expenses of sale, will, at $1¼ per acre, produce about $40,000, equal to build 2 miles of road. When the 10 miles is completed to the satisfaction of a commissioner appointed by government, then and then only, I have 5 miles or one half of the lands with which to reimburse myself, the other half to be sold and the proceeds held in the treasury as a fund, and so on for the 800 miles. Afterwards, to the mountains and to the ocean, when the entire 60 miles do not furnish means to continue the road, then this fund is to be applied to that purpose. And, gentlemen, from your own experience, I think you must be persuaded that the facilities which the road must undoubtedly give to settlement, would furnish means quite as fast as it could be applied to the construction of the road. You will perceive the p'an is founded entirely upon the wilderness lands, and can only be carried out by connecting the sale and settlement thereof with the building of the road which cannot fail of being of vast importance and benefit to the settlers. With this road commenced, how changed would be the condition of emigrants?—Now they land upon our shores, from their inexperience in a strange land their little means is soon wasted, and many become burdensome to our citizens. And those who go to the far west are obliged from necessity to select their home remote from any means of communicating with markets, without any reward for labor until the first crop is grown, and then the cost of transit takes all, nothing left for an exchange for other comforts and necessaries of life, he is surrounded with an abundance of earthly products and still wants; he does not get a reward for his labor to aid in sustaining the other branches of industry.

But commence this road, and the emigrant would have a fixed point of destination. He would not be detained in our cities, but pass on through our river, canal, and the lakes to his new home. If he had 50, 100 or more dollars, he could give one half towards paying for his land; the other half would build his cabin and get in his first crop. Then his labor would be wanted on the road to pay the balance for his land. The next season his crops ripened, and wanted by those who come as he was the season before. And those who come without money, their labor on the road would purchase the land, and they too would soon become independent; and comfort and happiness would surround all. And that would be the moral influence? Necessity often, yes, almost always, tempts man to vice and crime; but place him where his labor receives its just and proper reward, and you raise him. I care not how low he may have been, you elevate him to what his Creator intended him—to a man—and he may rear an offspring, respectable, honorable, and filling the highest places in the land.

The questions have been asked by many:—"How is the road to be protected from the Indians through a wilderness of such vast extent? And how is it to be supplied with water and fuel? And what will support it and keep it up?"

To the first I answer, if the road is built, it can only be done by the sale of the land and settlement of the country on its line, which will be a sufficient protection, and through where the land is poor, the constant business and operations of the road would protect it. The Indian disappears with the game; and it cannot be supposed that game such as buffalo and elk, the dependence of the Indian, would remain long in the vicinity of a railroad constantly in use, as this must be, even for its construction.

Fuel and water. Of the former, coal, there is an abundance all to the Rocky Mountains and the other side. It has been found on the Columbia river and Vancouver's island.

Water; to the Missouri we cross living streams each ten to twenty miles; from the Missouri to the Pass, we go parallel with, and if necessary, directly on the banks of rivers, from the Pass to the ocean, probably follow the courses of the streams.

(To be Continued.)

ITEMS.

New Spark Arrester.—We find in an exchange, a brief notice of an invention in this line, by a mechanic of this city—name not given. Its principal peculiarity consists in the arrangement of pipes which conduct the smoke through a horizontal chamber containing a quantity of water, into which all the sparks and cinders are deposited, insomuch that a white cambric handkerchief was not soiled by being held over the top of the smoke pipe. The trial was made with both coal and pine wood fuel. We wish the inventor ample success, though he may be aware that the use of a water chamber for catching the sparks has been projected and rejected some years since.

☞ Application is to be made to the next Legislature of Connecticut, by the Norwich and Worcester railroad company, for liberty to change the track between the upper and lower depots in Norwich, so that it may run in a north and west direction.

Wealth of the River Amazon, South America.—We some time since noticed the fact, that a celebrated English nautical and mining engineer had been exploring the country up the Amazon and made some valuable discoveries as to the existence of extensive deposits of the precious metals, auriferious sand in the streams, and many botanical specimens quite unknown in this country. A company was formed in the United States to endeavor to reap the advantages of these discoveries; and the French sent out an expedition two or three years since, which has, however, turned out unsuccessful, as another is now forming to go out in the Astrolabe corvette and Alecton steamer of eighty horse power. The Academy of Science, under the direction of M. Arago, have given all the necessary instruction to the officers; and these vessels will leave, early in the spring, for the Brazils. From the discoveries which have been made, it is presumed that a communication exists between the Amazon and the Pacific, or, at least, a very slight interruption. The result is looked forward to with great interest by scientific men, as there appears to be no doubt entertained of the existence of large quantities of mineral wealth. The Anglo-American company are already prosecuting their researches, and have several narrow boats, drawing but little water, some of which are worked by steam, far up the river. From these exertions it is not too much to expect that we shall soon be in possession of some most interesting information of the mineral and other natural resources, the inhabitants, zoology, botany, and so forth, of this interesting but little known portion of the globe.

Railroad Travel.—From present indications there will be during the present season a greater amount of travelling than ever before in this country. The railroads in every direction have in prospect a rich harvest, for it is upon the passenger travel that they reap the largest profits. It is greatly desired, in view of these facts, that every possible precaution may be taken to avoid accidents and loss of life. With wholesome rules, rigidly enforced, we are sure many of the accidents that happen, might be avoided. A statement now before us says, nearly 800,000 passengers have been carried over the Albany and Troy road since its commencement, without the slightest injury or the loss of a single drop of blood to any of the passengers. This is highly creditable, and though we do not believe that the number of accidents by railroad travelling, compared with the greater number of the passengers passing over them, approaches the number of casualties by stage coaches, we still think that by more efficiently enforced regulations, many of the accidents that now occur might be avoided, to the safety of life and to the profit of companies, resulting from the lessened destruction of railroad property, and the increased travel which the assurance of safety would invite. The fewer accidents and more profitable management by our more systematic neighbors in the eastern States, are proof of this. Notwithstanding the greater amount of travel there, accidents seldom occur, and as regards the profits of their railroads, the fact that there is not now a railroad running from Boston, the stock of which is not above par, is conclusive. What is true of railroads at the east, a very short season of experience will show to be true throughout the union. Railroads cannot fail to become immensely profitable.—*Ledger.*

Auburn and Rochester Railroad.—This road having been made the special object of attack by the Buffalo Express, it has been promptly vindicated by the Rochester papers. The Express had charged that it was the worst managed road on the line, and the mail failures, west, were mainly attributable to it. The Rochester Democrat furnishes a table of the time of departure and arrival of trains between Auburn and that place, for nine days, from which it appears that the train has started from Auburn but once at the regular hour, and then it arrived at Rochester in time. Twice it has left fifteen minutes behind, but arrived in time. In all the other cases it has been obliged to wait from one to four hours for the arrival of the eastern trains. The average time is 5 hours and 31 minutes, notwithstanding it has been obliged to lose time at meeting places, being, in consequence of the delay, an irregular train. The trains from Rochester to this place run with such precision, that some of our citizens set their clocks by it, and so far from being a badly managed road, we doubt if there is a better in the country. The agents and engineers are not only men of much experience and understand their business perfectly, but are also gentlemanly and accommodating to a degree that attracts general attention.—*Canan. Rep.*

Ogdensburg Railroad.—A writer in the Boston Courier shows the advantages to that city of the Ogdensburg railroad in a strong light. He says that if the road had been opened this spring, Boston would have been a gainer by half a million of dollars, because she could have sold that amount of goods for the west, which would have reached their destination a month sooner than by the Erie canal. This is true so far as this year is concerned, but there is not usually so great a difference in the opening of the lake and canal.

Appointment of Civil Engineer.—We are pleased to learn that James Herron, Esq., of this city, distinguished for his knowledge of mechanics and scientific acquirements, has been appointed Chief Engineer at the United States Navy Yard at Pensacola, to superintend the public works which Congress has authorized to be constructed at that place, and the plans of which devised by Mr. Herron, have already been adopted.

Mr. Herron will, we doubt not, do justice to the appointment, and render good service to the government.

BOUND VOLUMES.

Volumes of this Journal, for the Years **1838** *to* **1846**, *INCLUSIVE, may be had Bound, at Subscription Price, on application at this Office.*

MISSING NUMBERS
OF THE RAILROAD JOURNAL.

Subscribers, who wish to obtain Missing Numbers of Back Volumes of this Journal, will do well to apply immediately.

☞ *One or two* COMPLETE SETS *of the* RAILROAD JOURNAL *may be had in a few weeks—or as soon as two numbers can be reprinted—by application to the Editor.*

PIG AND BLOOM IRON.—THE SUBSCRIbers are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware etc. Also several brands of the best Puddling Iron, Juniatta Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
12tf Vine St. Wharf, Philadelphia.

CHAMPLAIN & CONNECTICUT RIVER RAILROAD—Notice to Contractors.—Proposals will be received until the 1st day of June, 1847, for the *Grading*, *Masonry* and *Bridging* of that part of the Champlain and Connecticut River Railroad, extending from the west side of the summit at Mt. Holly to the Village of Brandon, a distance of about 34 miles, and being the whole uncontracted portion of said road.

Maps, Profiles and Specifications may be found after the 20th of May next at the Office of the Engineer in Rutland, where every necessary information will be given.

The line will be divided in sections of convenient length for construction, and from those to whom the work may be awarded, satisfactory security will be required.

Proposals may be left with the undersigned, at Burlington—with George T. Hodges, Esq., at Rutland—or with William Henry, Esq., at Bellows Falls.

The work will be awarded at Rutland, as soon after the 1st of June, as the necessary examination of the bids can be made. By order of the Board,

T. FOLLETT, President.

Office of the C. & C. R. R. R. Co.,
Burlington, Vt., April 29, 1847. 3t20

RAILROAD IRON.—THE "MONTOUR Iron Company," Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to MURDOCK, LEAVITT & CO., *Agents.*
1y48 77 Pine St., New York.

LAWRENCE'S ROSENDALE HYDRAulic Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paper-ea barrels, by JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

A. & G. RALSTON & CO., NO. 4 South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz:
180 tons 2½ x ½ inch Flat Punched Rails, 20 ft. long.
25 " 2½ x ½ " Flange Iron Rails.
75 " 1 x ½ " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures. 1tf

LOCOMOTIVE AND CAR AXLES. The Subscribers are now prepared to receive orders for the well known and approved *Reading Locomotive and Car Axles*—drawn to any required pattern from *Bloom Iron only.* Address

SAM'L KIMBER & CO.,
Willow Street Wharf,
4tf Philadelphia, Pa.

RAILROAD IRON.—THE NEW JERSEY Iron Company, Boonton, N. J., are now preparing to make Railroad Bars, and are ready to take orders or make contracts for Rails, deliverable after the first of December next. Apply to

FULLER & BROWN, Agent,
No. 139 Greenwich, corner of Cedar street.
September 18, 1846. 10tf39

RAILWAY IRON.—DAVIS, BROOKS & Co., No. 68 Broad Street, have now in port on Ship-board, 200 Tons of the best English heavy H Rails, 60 lbs. to the lineal yard, which they offer for sale on favorable terms, *also*, about 6 to 700 Tons now on the way, to arrive shortly, of the same description of Rail. 46tf

TO CONTRACTORS.—KENNEBEC AND PORTLAND RAILROAD.—Proposals will be received at this office until the 15th of May, for the *Grading and Masonry* of 28 miles of this road, extending from North Yarmouth to Bowdoinham, and the Branch Road from Brunswick to Bath, including the masonry for the Bridges across the Androscoggin, New Meadows and Cathance rivers. The line of road and the plans and profiles will be ready for examination on the 10th of May; after which time any information in relation to the work can be had at this office, or of the Resident Engineers on the line of the road.

Persons unknown to the officers of the company, must accompany their bids with satisfactory evidence of their ability to execute the work.

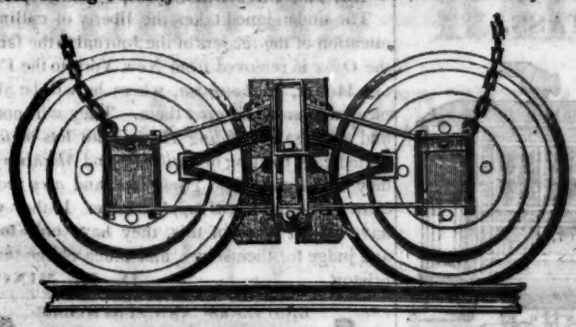
The remainder of the line from Bowdoinham to Augusta, 21 miles, will be ready for contract about the 15th of June; of which due notice will be given.

GEO. S. GREENE, Eng. K. & P. R. R.
ENGINEERS OFFICE, K. & P. R. R.
Brunswick, Me., April 6, 1847. 1m16

THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER 17 Burling Slip.
1y10 New York.

RAY'S EQUALIZING RAILWAY TRUCK.—THE SUBSCRIber having recently formed a business connection in the City of New



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East river, (of which firm the subscriber was late a partner) under the immediat supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846. W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the best and most economical truck now in use.

[Signed,] WILLIAM ROE, Sup't of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845. [Signed,] E. A. NICOLLS,
Sup,t Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed,] T. L. SMITH,
Jersey City, November 4, 1845. N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot, Jamaica November 12, 1845. } [Signed,] JESSE LEACH,
1y25 Sup't Motive Power.

ENGLISH PATENT WIRE ROPES—FOR THE USE OF MINES, RAILWAYS, ETC.—for sale or imported to order by the subscriber.

These Ropes are manufactured on an entirely different principle from any other, and are now almost exclusively used in the collieries and on the railways in Great Britain, where they are considered to be greatly superior to hempen ones, or iron chains, as regards safety, durability and economy. The plan upon which they are made effectually secures them from corrosion in the interior, as well as the exterior of the rope, and gives a greater compactness and elasticity than is found in any other manufacture.

Many of these ropes have been in constant operation in the different mines in England, and on the Blackwall and other inclined planes, for three and four years, and are still in good condition.

They have been applied to almost every purpose for which hempen ropes have been used—mines, heavy cranes, standing rigging, window cords, lightning conductors, signal halyards, tiller ropes, etc. Reference is made to the annexed statement for the relative strength and size. Testimonials from the most eminent engineers in England can be shown as to their efficiency, and any additional information required respecting the different descriptions and application will be given by

ALFRED L. KEMP,
75 Broad street, New York, sole agent in the United States.

Statement of Trial made at the Woolwich Royal Dock Yard, of the Patent Wire Ropes, as compared with Hempen Ropes and Iron Chains of the same strength.—October, 1841.

WIRE ROPES.				HEMPEN ROPES.			CHAINS.		STRENGTH
Wire gauge number.	Circumference of rope.	Weight per fathom.		Circumference of rope.	Weight per fathom.		Weight per fathom.	Diameter of iron.	Tons.
	INCH.	LBS.	OZ.	INCH.	LBS.	OZ.	LBS.	INCH.	
11	4¼	13	5	10	24	–	50	15-16	20
13	3¼	8	3	8¼	16	–	27	11-16	13¼
14	3¼	6	11	7¼	12	8	17	9-16	10¼
15	2¼	5	2	6¼	9	4	13¼	1-2	7¼
16	2¼	4	3	6	8	8	10¼	7-16	7

N.B. The working load, with a perpendicular lift, may be taken at 6 *cwt. for every lb. weight per fathom, so that a rope weighing* 5 *lbs. per fathom would safely lift* 3360 *lbs., and so on in proportion.* 1y24

THE SUBSCRIBERS, AGENTS FOR the sale of

Codorus,
Glendon,
Spring Mill and
Valley,
} Pig Iron.

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay orders for which are promptly supplied.

SAM'L. KIMBER, & CO.,
59 North Wharves,
Jan. 14, 1846. [1y4] *Philadelphia, Pa.*

RAILWAY IRON.—THE BEST QUALITY of English Heavy H Rails—60 lbs. to the yard—now in store, landing from the vessel, and on ship board to arrive, for sale on most favorable terms by

DAVIS, BROOKS & CO.,
Jan. 2. [1tf] 68 Broad St., New York.

RAILROAD SCALES.—THE ATTENtion of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.
Factory, 9th street, near Coates, cor. Melon st.
Office, No. 3 North 5th street,
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NICOLLS' PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in this country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee G. A. NICOLLS,
ja45 *Reading, Pa.*

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

RAILROAD IRON.—THE SUBSCRIBER'S New Rail Iron Mill at Phœnixville, Pa., is expected to be ready to go into operation by the 1st of September, and will be capable of turning out 30 to 40 tons or finished Rails per day. They are now prepared to receive orders to that extent, deliverable after the 1st of Octobet next, for heavy rails of any pattern now in use, equal in quality and finish to best imported.

PIG IRON.—They are also receiving weekly 150 to 200 tons of No. 1 Phœnix Foundry Iron, well adapted for light castings.

REEVES, BUCK & CO,
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Freight Cars of every description, and of the most improved Chilled Wheels of any pattern and size. Forged Axles, Springs, forwarded to any part of the country.

ride from State street, Boston—Omnibuses pass every fifteen
10*f*

HERRON RAILWAY TRACK,

As seen stripped of the top ballasting

A GOLD MEDAL AWARDED THE INVENTOR BY THE AMERICAN INSTITUTE.

THE UNDERSIGNED RESPECTFULLY invites the attention of Engineers, and Railroad Companies, to some highly important improvements he has recently made in the Herron system of Railway structure. These improvements enable him to effect a very large reduction in the quantity of Timber, and cost of construction, without impairing the strength of the Track, or its powers of resisting frost, while they secure additional features of excellence in the Drainage and facility of making Repairs.

The above cut represents the "Herron Track" as it is laid on the Philadelphia and Reading, and on the Baltimore and Susquehanna Railroads. The intersection of the sills of the trellis are 5 feet from centre to centre, while in the new construction they are only 2½ feet. This renders the string piece unnecessary, thus removing the only objectionable feature found in the Track.

The result of experience has proved that all Tracks constructed with longitudinal timbers, such as mud sills, and more especially, the continuous bearing string pieces retain the rain water that falls between the Rails, which, being thus confined, settles along those timbers, and accumulating in quantity flows rapidly along them on the descending grades, washing out the earth from under the timber, and frequently causing large breaches in the embankments of the road. Whereas all water intercepted by the oblique sills of the trellis, is discharged immediately into the side ditches.

In the 5 foot plan, the Track occupies a Road bed nearly 11 feet wide, while the new construction takes but 8 feet; the timber being more concentrated under the Rails. A block of hard wood, about 2 feet long and 15 inches wide, is introduced into a square of the trellis for the purpose of giving an additional, and effectual support to the joints of the Rails, which rest upon it. Should these joint blocks become chafed and worn by the working, and imbedding of the chairs, as is now the case on all Railroads, they can be readily replaced without any derangement of the timbers less liable to wear.

The following is a general estimate of its cost near the seaboard. In the interior it will be considerably less.

ESTIMATE OF THE PROBABLE COST OF ONE MILE.

4,224 Timbers, 11 ft. long, 3 x 6 inches = 68,696 ft. b.m., at $10 =	$686 96
587 Oak joint blocks 2 ft. x 3 x 15 in. = 4,403 ft. b.m., at $13 =	57 24
13,000 Spikes = 2,250 lbs. at 4½ cts	101 25
Workmanship free of patent charge	600 00
Cost of one mile including the laying of the Rail	$1,445 45

He has made other important improvements, which will be shown in properly proportioned models, that give a much better idea of the great strength of the Track than a drawing will do.

Sales of the Patent right to all the distant States will be made on liberal terms.

JAMES HERRON.
Civil Engineer and Patentee.
No. 277 South Tenth St., Philadelphia. 33tf

FRANKLIN HOUSE,
No. 105 Chestnut Street, Philadelphia.

The undersigned takes the liberty of calling the attention of the readers of the Journal to the fact that the *Office* is removed from New York to the FRANKLIN HOUSE, *Philadelphia*, where he will be always pleased to *meet* and *greet* them. They will not only find a pleasant *Reading Room*, with lots of *foreign* periodicals, treating of *Railroads* and *Machinery*, but they will always find *good-sized* and *airy* rooms—*clean beds*—and a *well supplied* table. If they would have further proof of this, they have only to call, and judge for themselves, and much oblige the proprietor, D. K. MINOR.

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WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-4 TO 6 INCHES DIAMETER,
and
ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
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MERRICK & TOWNE, do.
HINCKLEY & DRURY, Boston.
C. C. ALGER, Stockbridge Iron Works Stockbridge, Mass.